

peripheral devices whose store 380 entries are invalid, unless those requests are for hard disk devices that are not designated as assigned to the host 12.

A more complete understanding of the operation of the filter driver 354 may be attained by 5 reference to the following truth table.

VALID	FIBRE CHANNEL		HARD DISK	LUN	MASK
REGISTRY	PORT		DEVICE	ASSIGNED	DEVICE?
ENTRY					
N	N		N	N	N
N	N		N	Y	N
N	N		Y	N	Y
N	N		Y	Y	N
N	Y		N	N	N
N	Y		N	Y	N
N	Y		Y	N	Y
N	Y		Y	Y	N
Y	N		N	N	N
Y	N		N	Y	N
Y	N		Y	N	N
Y	N		Y	Y	N
Y	Y		N	N	N

Y	Y	N	Y	N
Y	Y	Y	N	Y
Y	Y	Y	Y	N

Following completion of the “claims process,” i.e., when the host operating system makes claims for devices (which the filter driver selectively blocks), as discussed above, the host 12 re-executes the user mode process 374. Since this occurs with respect to the current configuration 5 of the host ports, entries in the store 380 previously identified by the kernel mode process 378 as invalid are properly updated. In the event that the user mode process identifies a port that (a) is connected to a non-assigned, non-fiber channel disk drive and (b) had a store 380 entry previously marked as invalid, the user mode process 374 causes a new, non-blocked claim to be issued for the device so that it can be properly accessed by the operating system.

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A further understanding of the foregoing may be attained by reference to the discussion that follows.

In the illustrated embodiment, common user mode code is utilized to use the common user mode 15 interface 374 prior to an install of the filter device drivers 354 on the operating system, and immediately following a re-boot. The user mode code is only required once, because once the active topology is known, changes to that topology are not noticed until after a re-boot, especially on an operating system such as Windows NT and 2000. Although Windows 2000 adds the plug-and-play option, the actual bus adapters cannot be hot plugged. Therefore, new or 20 changed bus adapters are only recognized after re-boot.

The first snapshot of the bus adapter topology is captured during install. This provides an initial snapshot of the adapters 382 that are connected to a SAN. Boot devices are not connected to a SAN and cannot change without destroying the operating system boot start. Therefore, the
5 concern for boot devices is gone because the initial snapshot where boot drive exists never changes, and since all non-SAN connected devices are never masked the boot device is available during every re-boot. Any masking of the boot drive effectively destroys the system that is to be attached to a SAN.

10 The snapshots are stored in the Windows registry 380. The common user mode interface 374 identifies adapters 382 behind ports on a Windows operating system. Adapter drivers are written as SCSI-miniport device drivers on a Windows operating system, and when filtered, they are viewed as a level below port device drivers 356. Thus, only a port topology is required when faced with the Windows operating system. Since this information is stored by the Windows
15 operating system after changing or adding a new adapter device, it accurately depicts the port topology of the system. The snapshot that is captured is taken from the Windows registry, and stored into another registry entry that is unique to the filter device drivers 354. This is the validation information that is used to determine if the topology has been altered after the prior re-boot, or install. The actual identification information that is used is the response received by the
20 common user interface on whether or not a device is connected to a SAN. This identification information is stored along with the validation information.